

WHAT IS CLAIMED IS:

1. A fuel cell system comprising:
 - at least one fuel cell having a fuel chamber including a fuel electrode, an oxygen chamber including an oxygen electrode and an electrolyte layer interposed between the fuel electrode and the oxygen electrode; and
 - pressure regulating means for regulating a supply pressure of fuel gas to be supplied to the fuel chamber;
 - wherein the pressure regulating means sets up the supply pressure of the fuel gas at a time when the fuel cell starts up power generation higher than the supply pressure of the fuel gas during a normal power generation state in which the fuel cell is generating electric power.
2. The fuel cell system according to claim 1, wherein the pressure regulating means includes a regulatable pressure valve and control means for controlling the regulatable pressure valve.
3. The fuel cell system according to claim 1, further comprising a fuel gas supply line through which the fuel gas flows at the power generation startup time wherein the pressure regulating means includes two regulating valves that respectively provide different supply pressures, a switching valve arranged on the line, and switching means for switching the open and close of the switching valve.
4. The fuel cell system according to claim 1, wherein the normal power generation state of the fuel cell includes a state when the fuel cell is connected to an external load.
5. The fuel cell system according to claim 1, further comprising a start switch for turning on and off of the fuel cell system wherein the power generation start-up time of the fuel cell includes a predetermined period of time after the start switch is turned on.

6. The fuel cell system according to claim 5, wherein the power generation start-up time of the fuel cell includes the case where the start switch is turned on after a lapse of a predetermined period of time after the start switch has been turned off in the normal power generation state.
7. A fuel cell system comprising:
at least one fuel cell having a fuel chamber including a fuel electrode, an oxygen chamber including an oxygen electrode and an electrolyte layer interposed between the fuel electrode and the oxygen electrode;
a fuel gas concentration sensor for detecting the concentration of a fuel gas discharged from the fuel chamber; and
pressure regulating means for regulating a supply pressure of the fuel gas to be supplied to the fuel chamber based on the detected fuel gas concentration;
wherein the pressure regulating means sets up the supply pressure of the fuel gas at a time when the fuel cell starts up power generation higher than the supply pressure of the fuel gas during a normal power generation state in which the fuel cell is generating electric power.
8. The fuel cell system according to claim 7, wherein the pressure regulating means switches the supply pressure of the fuel gas at the start-up time to the supply pressure of the fuel gas at the normal power generation state in the case where the fuel gas concentration detected by the fuel gas concentration sensor is higher than a predetermined fuel gas concentration.
9. The fuel cell system according to claim 8, wherein the predetermined fuel gas concentration is 95 volume percent.
10. The fuel cell system according to claim 7, further comprising an oxygen concentration sensor for detecting the concentration of an oxygen gas discharged from the fuel chamber wherein the pressure regulating means switches the supply pressure of the fuel gas at the start-up time to the supply pressure of the fuel gas at the normal power generation state in the case where

the fuel gas concentration detected by the fuel gas concentration sensor is higher than a predetermined fuel gas concentration and the oxygen concentration detected by the oxygen concentration sensor is lower than a predetermined oxygen concentration.

11. The fuel cell system according to claim 10, wherein the predetermined fuel gas concentration is 95 volume percent and the predetermined oxygen gas concentration is 1 volume percent.

12. A fuel cell system comprising:

a start switch for turning on or off of the fuel cell system;

at least one fuel cell having a fuel chamber including a fuel electrode, an air chamber including an oxygen electrode and an electrolyte layer interposed between the fuel electrode and the oxygen electrode;

a timer for measuring a period of time after the start switch has been turned off; and

pressure regulating means for regulating a supply pressure of fuel gas to be supplied to the fuel chamber;

wherein the pressure regulating means sets up the supply pressure of the fuel gas at a time when the fuel cell starts up power generation higher than the supply pressure of the fuel gas during a normal power generation state in which the fuel cell is generating electric power in the case where the period of time measured by the timer is longer than a predetermined period of time and then the start switch is turned on.